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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,202	08/22/2006	Yoshihiko Seno	292589US40PCT	5563

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EXAMINER	
DUONG, THO V	

ART UNIT	PAPER NUMBER
3744	

NOTIFICATION DATE	DELIVERY MODE
07/26/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/590,202	SENO ET AL.	
	Examiner	Art Unit	
	Tho v. Duong	3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 April 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) *16* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15 and 17-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8/22/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Claims 15-24 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species A of figures 1-4, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 4/15/10.

Applicant's election with traverse of species A in the reply filed on 4/15/10 is acknowledged. The traversal is on the ground(s) that the search of the species of figures 1-4 overlaps with the search of the species B of figures 6-8. This is not found persuasive because each of the species requires a serious burden to the examiner, in which the species B of figure 6-8, in particular claim 16, requires a different search queries of pipes connected to the connecting blocks.

The requirement is still deemed proper and is therefore made FINAL.

Furthermore, Claims 15 and 17-24 will also be treated under merit since the claims read on the elected species of figures 1-4.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the receiver-fixed header" in lines 6,7. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "the receiver-fixed header" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "the function" in line 4 and 5. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 9-13, 15 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Inaba et al. (US 5,709,106). Inaba discloses (figures 2, 3, 8a,b and 13) a heat exchanger comprising a pair of headers (26a,b) extending upward or downward and spaced apart from each other, a plurality of refrigerant tubes (28) arranged one above another in parallel at a spacing between the pair of headers and having opposite ends joined to the respective header, fins (34)

arranged between adjacent pairs of refrigerant tubes; and a liquid receiver (35) fixed to one of the header; a receiver connecting block (36) being fixed to a periphery wall of the header and having channels for causing interior of the header to communicate with the interior of the receiver there through; the receiver being fixed to the connected block (36); the connecting block and the liquid receiver being provided with respective fixing portion having respective contact faces in intimate contact with each other, the channel has one end opened in the contact face; a seal member being liquidly tightly provided around respective outer peripheral surfaces of both the fixing portion so as to cover a boundary between the contact faces of the fixing portion of the block and the fixing portion of the receiver. Regarding claim 9, Inaba discloses (figure 2) that the headers are internally divided a portion at the same level by baffles (27) to thereby provide a condenser portion having a function of a condenser and a supercooler portion (25) positioned bellow the condenser portion and having a function of supercooler; the receiver connecting block having channels (49) permitting a refrigerant flowing out of the condenser portion to pass through interior of the receiver and to flow into the supercooler portion (25). Regarding claims 10-13, Inaba discloses (figure 18) a refrigeration cycle as an air conditioner comprising a compressor (1), a condenser (2), an expansion valve (4) and an evaporator (5).

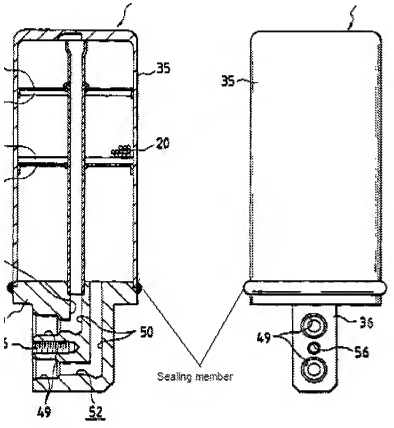

Figure A: The modified figure corresponds to figures 8a,b with sealing member shown.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3 and 18 are rejected under 35 under 35 U.S.C. 103(a) as obvious over Inaba et al. (US 5,709,106). Inaba substantially discloses all of applicant's claimed invention as discussed above except for the limitation that the sealing member is at least 5 mm in length. It would have

been obvious to one having ordinary skill in the art at the time the invention was made to provide a sufficient length of the sealing member such as claimed since is has been held that where the general condition of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233. Furthermore, it is would have been obvious that too short of a sealing member length is not enough to cover the joint, which may cause leak between the joint and too much of a sealing member will increase the cost of the overall heat exchanger.

Claims 3,8, 18 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inaba in view of J. W. Pedlow et al. (US 2,739,829). Inaba substantially discloses all of applicant's claimed invention as discussed above except for the limitation of a thermally shrinkable tube seal and the sealing member is at least 5 mm in length. Pedlow discloses (figures 1-2 and column 2, lines 24- column 3, line 16) a connector includes a thermal shrinkable tube (8) of 5 inches in length surrounding a joint between two connecting structures for a purpose of producing the joint rapidly and inexpensively while producing a strong sealed joint. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Pedlow's teaching in Inaba's device for a purpose of producing the joint rapidly and inexpensively while producing a strong sealed joint.

Claims 14 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inaba in view of Robert Heisler (US 2,738,992). Inaba substantially discloses all of applicant's claimed invention as discussed above except for the limitation of having a tubular seal sliding over the fixing portions of the connecting structures (liquid receiver and the connecting block), which are lubricated. Heisler discloses (figures 1-8) teaches of a coupler including a tubular seal (6) sliding

over the joined structures (2,4), which are lubricated, for a purpose of providing a flexible pipe coupling which resists fluid leakage and capable of taking deflection and withstanding vibration and shock. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Robert's teaching in Inaba's device for a purpose of providing a flexible pipe coupling which resists fluid leakage and capable of taking deflection and withstanding vibration and shock.

Claims 4-8, 19 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inaba in view of Chudy (US 5,884,678). Inaba substantially discloses all of applicant's claimed invention as discussed above except for the limitation of an elastic tubular seal. Chudy discloses a simple connector comprising of a tubular seal member (38) having rubber elasticity, so that the inner shape (40) of the seal, having grooves on its inner surface, is smaller than the contours of the outer peripheral surfaces of the fixing portions and able to be stretched around to retain two ends of the structures to be connected for a purpose of a forming an easy, flexible connector that allows the connector to receive different size of the structures to be connected. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Chudy's teaching in Inaba's device for a purpose of forming an easy, flexible connector that allows the connector to receive different size of the structures to be connected. Regarding claim 7 and 22, Chudy does not disclose the tubular seal is made of silicon rubber, ethylene, propylene rubber...etc. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select one of the claimed rubber, since it has been held to be within general skill of a worker in the art to select a known material on the basic of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 415. Furthermore,

Chudy discloses (column 4, lines 22-33) that the elastic material can be selected from any elastomer, which can be stretched to form a tight fit around the structures to be connected. Regarding claims 6 and 21, Chudy does not disclose that claimed range of the connector diameter and the structures diameter to be within $0.7d<D<d$. Chudy does not disclose any critically or unexpected result for having the claimed range. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select the inner diameter of the connector within the claimed range since it has been held that wherein the general condition of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233. In this case, Chudy discloses (column 2, line 1-30) the general conditions of the claim that the inner diameter of the connector is smaller than the outer peripheral of the structures to be connected so that the connector can be stretched around to tightly fit the structures within the connector. Regarding claims 8 and 23, the thermoplastic material is subjected to be expanded or contracted upon the temperature changing.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ewing et al. (US 4,023,834) discloses a push type coupling and conduit pipe assembly.

Stanley (US 4,098,528) discloses a pipe coupling.

Nishishita et al. (US 5,358,034) discloses a heat exchanger.

Chevallier (US 5,988,270) discloses a coupling device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tho v. Duong whose telephone number is 571-272-4793. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tyler J. Cheryl can be reached on 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tho v Duong/
Primary Examiner, Art Unit 3744